



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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Ref: EPR-N

March 31, 2009

Glenn Wallace
Bureau of Land Management
Colorado State Office (CO-931)
2850 Youngfield Street
Lakewood, CO 80215-7093

RE: Proposed Red Cliff Mine Project
CEQ # 20090005

Dear Mr. Wallace:

In accordance with our responsibility under Section 309 of the Clean Air Act, 42 U.S.C. Section 7609, and the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), the United States Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Red Cliff Mine Project near Mack, Colorado.

The proposed action would issue a right-of-way (ROW) and use of public lands to support an expansion of the existing CAM-Colorado, LLC (CAM) mining operation. In addition, the proposed action includes the connected actions of a lease-by-application (LBA) for an adjacent block of federal coal (14,466 acres) and a separate ROW application from the Grand Valley Power utility for construction and operation of a new electric transmission line (69 kV) to meet the proposed project's power requirements.

In completing our review, EPA's primary concern is methane capture. The parties intend to construct and operate infrastructure needed to mine coal from existing leases and to transport it by rail to meet current market demand for nonrenewable, carbon-intensive energy fuels. Lessees have the right to vent, discharge, or otherwise dispose coal mine methane as necessary for underground mine safety consistent with permitted mining operations under federal and state law and regulations. Methane is a greenhouse gas that remains in the atmosphere over a significant period of time with at least twenty times the effectiveness of carbon dioxide in trapping heat radiated from the earth. Although methane is emitted from both natural and anthropogenic sources, underground coal mines are the largest source of coal mine methane.

EPA supports energy conservation as an important pollution prevention measure, and notes that the Council of Environmental Quality (CEQ) has issued a memorandum on energy conservation encouraging federal agencies to incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision-making processes, and to evaluate and report those efforts, as appropriate, in documents prepared pursuant to NEPA. EPA maintains a voluntary Coalbed Methane Outreach Program in which the U.S. coal industry has captured for use or sale over 535 billion cubic feet of coal mine methane. Twenty active underground mines in the U.S. with methane capture projects operating in 2006 prevented 180

billion cubic feet of methane from entering the atmosphere, thereby offsetting almost 73 million metric tons of carbon dioxide-equivalent. The DEIS states [page 2-30] the potential for methane liberation from the proposed Red Cliff mining operation ranges from 9 to 14 million cubic feet per day or 3 to 5 billion cubic feet per year (1-2 megatonnes of CO₂-equivalent). The potential for greenhouse gas emission reductions would be significant and BLM should disclose in the final EIS what administrative actions can be taken in the coal leases to require the lessee to legally capture this methane. We applaud the BLM for including in its proposed action an analysis of methane venting even though CAM does not utilize a methane drainage system in its current logical mining unit at the McClane Canyon Mine nor include provision for a coal mine methane degasification system (wells) in its current mining permit application to the Colorado Department of Reclamation, Mining and Safety (DRMS).

We recommend that the final EIS include the issuance of an addendum to CAM's existing logical mining unit leases (COC-57198) and to any new coal lease (COC 70538) that may be awarded through competitive bids in the lease-by-application process. The Addendum should include language similar to the addendum that amended the Mountain Coal Company's West Elk coal lease (COC 67232) that authorized the lessee to capture for use or sale any or all of the coal mine methane vented or discharged for underground mine safety purposes by applicable laws and MSHA regulations.

In addition to methane capture, EPA has identified several concerns regarding groundwater, surface water, air quality, and the proposed citizens' wilderness study area, Hunter Canyon. These concerns are described in the attached technical comments.

In the light of our concerns expressed in the enclosed technical comments about the draft EIS and the proposed project, we have rated the document with Environmental Concerns (EC) - 2. A description of EPA's rating system is enclosed. EPA believes the information in the DEIS may be insufficient and that missing information and analyses on substantial issues must be completed and disclosed in the Final EIS. Along with this rating comes a commitment from EPA to work closely with you and your staff in resolving significant issues.

EPA proposes that we meet to discuss any concerns about the draft EIS and to continue working in cooperation to resolve these concerns. Please send one hard copy of the FEIS and one soft copy on CD to this office at the same time the FEIS is officially filed with our Washington, D.C. Office. If you have any questions about our comments, please contact me at (303)312-6004 or James Hanley, lead reviewer for this project, at (303)312-6725 or hanley.james@epa.gov.

Sincerely,

Larry Svoboda
Director, NEPA Program
Office of Environmental Protection and Remediation

Enclosures: Summary of EPA Rating Definitions
Detailed Technical Comments

Detailed Technical Comments

Groundwater quantity

Water to be used at the mining operation will be diverted from surface waters and transferred via pipeline to the mining operation. Therefore no direct withdrawal of groundwater in the mine area is anticipated and therefore no direct impact to the quantity of groundwater is projected.

Indirect impacts to water quantity are possible due to subsidence and subsequent dewatering of perched aquifers. The Colorado Division of Reclamation, Mining and Safety (DRMS) in the coal mine permit review is addressing subsidence issues for this DEIS.

Groundwater quality

Ground water quality in the vicinity of the mine is not palatable as drinking water because of the high TDS. However, the water can be used and is used for stock and wildlife watering. On page 4-412 the DEIS states that, "Underground mining activities have the potential to impact the flow and quality of groundwater." MODFLOW Simulation C Groundwater Levels and Flow does show that in later mining phases it is conceivable that groundwater could drain downward along new bedrock fractures caused by mine subsidence, which could reduce groundwater levels in both the bedrock and the alluvium. Perched aquifers that manifest as intermittent springs may flow into the mine workings and exit the mine portal. The DEIS concludes on page 4-107 that, "Considering the poor baseline water quality and limited inflow to the mine, the mine is not expected to substantially degrade groundwater quality beyond current conditions." Although the mine portal is to be sealed as part of the final reclamation, contingencies and commensurate financial assurance for long term treatment of water should be disclosed in the FEIS.

The primary surface activity of concern with potential impacts to groundwater is the waste rock pile. Waste coals are the low-energy-value discards from the coal preparation plant often referred to as gob. A waste rock disposal area encompassing approximately 190 acres was originally proposed. The only mitigation activity included in the DEIS was to reference Colorado Division of Wildlife scoping comments expressing concern regarding impact to the sage-covered terraces at the south end of the disposal area. To reduce the impact to this important wildlife habitat, this feature was redesigned to impact fewer acres of this habitat. Figure 2-6, Waste Rock Pile, shows both the original area and the redesigned waste rock pile. One additional side comment stated that the, "Protection of some resources (e.g., drainages) will be included in permits issued by DRMS" (Red Cliff DEIS, 2009).

The characterization of the waste material, the potential for fire and the impacts to both surface water and groundwater were inadequately addressed in the DEIS. As a reference, the 2002 National Academy of Sciences Commission Report on Geosciences, Environment and Resources titled "Coal Waste Impoundments: Risks, Responses, and Alternatives" focused on the engineering and characterization of coal waste. Waste coal piles are known to produce low pH water containing high levels of iron, manganese and aluminum pollution and release it into waterways and groundwater. Because of the oxidation of pyrite and the exothermic reaction, these piles sometimes catch fire as spontaneous combustion, releasing toxic pollution into the air and water.

First, potential discharges from the Coal Preparation Plant were not addressed. On page 2-73 the DEIS states that water in this plant will be closed circuit and that, “The material has been tested and is not classified as hazardous material.” No data was provided to substantiate this claim. As waste water from this facility could impact the quality of both surface and groundwater, alternatives to processing or a contingency plan should be provided in case spills, seeps or discharges to groundwater or surface water were to occur from this facility.

Second, on page 2-73 the DEIS acknowledges the potential for fire in describing waste rock disposal, “Waste rock would be placed and compacted to 90% of the maximum dry density to prevent spontaneous combustion.” In addition, the active Hot Point Fire in a coal seam outcrop is located approximately ¼ mile from the Waste Rock Disposal Area as shown on Figure 2-8. In our experience we have observed waste from a coal preparation plant smoldering as it was placed in a pit in contact with a coal seam. We recommend that the coal prep plant waste material be removed, cooled and placed in compacted lifts isolated from the coal seam outcrop. When this is not done, we have seen outcrop fires propagate until a multimillion dollar underground fire response was needed.

We recommend that the outcrop of the coal seams in the immediate vicinity of the proposed waste rock pile be mapped and the disposal area relocated to avoid any potential contact between the waste material and the coal outcrop.

Air Resources

BLM presented near-field and far field modeling results for project specific and cumulative impacts utilizing the models AERMOD and CALPUFF in screening level mode, respectively.

In the Draft EIS Section 4.2.1, Air Quality, a discussion of predicted PM10, visibility impairment and nitrogen deposition is presented that indicates negative impacts due to primarily construction activities. EPA acknowledges that the CALPUFF model used in the screening mode (CALPUFF Light) may provide higher than actual predictions. However, EPA recommends that whenever CALPUFF Light predicts adverse impacts, the regulatory version of CALPUFF utilizing MM5 meteorological data or a project scale or emission rate reduction strategy be employed to reduce negative impacts.

Pages H-13 and H-14 of the Air Quality Analysis Modeling Report (AQAMR) presents PM2.5 background and modeled concentrations very near the PM2.5 24-hour NAAQS (32.9 and 34.54 µg/m³) during the construction phases. Likewise, Page H-28 of the AQAMR presents several days of predicted visibility impairment at the Colorado National Monument (e.g. 20 days of impairment above 1.0 deciview during 1988) during the railroad construction phase. While the Colorado National Monument is not a Class I area, EPA is concerned with a large number of days of impairment in Sensitive Class II areas. During the construction phases, a large majority of the PM2.5 is apparently emitted from fugitive sources that can be controlled with common fugitive dust control measures such as, unpaved road treatments like magnesium chloride or other dust suppressant agents. To reduce the impacts of PM2.5, the final EIS should address

fugitive dust control measures, especially during construction related activities.

Draft EIS, Page 4-72 presents estimated ventilation air methane emissions of 2,326,554 tpy and methane degasification emissions of 1,551,036 tpy. EPA acknowledges that coal mine methane may have low concentrations of nonmethane organic compounds (NMOCs). However, given the high methane emission rates associated with the mine, the NMOC emission rates may be considerable. The Final EIS should present an actual compositional analysis and estimate of emissions of major NMOCs for the mine. Furthermore, EPA recommends that air modeling for NMOCs be conducted for high NMOC emission rates.

Draft EIS, Page 3-35 Table 3-8, presents the 1-hour Ozone NAAQS. Footnote 5 for the ozone standard should make mention that the 1-hour standard is for Early Action Compact Areas only. Draft EIS, Page 3-35 Table 3-8, The 24-hour PM_{2.5} Background concentration presented is not the same as the background concentrations used in Tables 3-5 and 3-7 in Appendix H, AQAMR. Please resolve the conflict for the Final EIS.

General Comments

DEIS Executive Summary page ES-1, discloses a tract delineation process that modified the number of acres nominated by CAM in its Lease-by-Application (LBA). The FEIS should explain the tract delineation process used by BLM to expand the LBA area requested (11,660 acres) to a greater lease area (14,466 acres). Also the FEIS should convert this surface acreage to tons of recoverable coal from this LBA tract.

Alternatives Comments

DEIS Section 2.9, page 2-30, discusses the amount of methane expected to be liberated during the Red Cliff mining operations. The FEIS should provide the reader the source of this data on methane liberation rates and the assumptions behind the extrapolation. We understand that the CAM McClane Canyon Mine on the adjacent lease does not have methane drainage wells so we are unclear how this site-specific data was obtained.

DEIS Section 2.11.1, page 2-36, generally discusses the adaptive management strategies available under BLM NEPA regulations to manage the research and engineering to be required from CAM to explore and report on the technical feasibility and net economic benefit of technologies and techniques for capture and use of coal mine methane. We recommend that the FEIS disclose the modifications that have been recently made to the Mountain Coal Company West Elk Mine leases and adopt a similar addendum to the existing and proposed leases in this proposed action. This component of the proposed action would expand the purpose and need for methane venting beyond merely complying with safety and health standards and include methane capture for use or sale.

DEIS Section 2.11.2, page 2-37, discusses the initial mine plan found in the mining permit application. The FEIS should analyze impacts not only from the initial mine plan shown for the first six years, but also for years 7-30, so that the full impacts of surface subsidence can be appreciated. This FEIS should provide more discussion on the 'careful' mine design that will

mitigate surface subsidence to the Big Salt Wash, a major perennial tributary to the Colorado River system.

DEIS Figure 2-8, page 2-39, shows a point of interest, “Hot Point Fire” on the surface map. The FEIS should more fully explain that this feature is an ongoing coal outcrop fire that contributes air pollutants to the atmosphere and may be under some plan for remediation.

Consequences and Mitigation Comments

Appendix B provides Table B-1, “Applicable Legal and Policy Requirements and Mitigation Measures by Resource”, page B-3. Although this table is very effective in disclosing stipulated limits or controls to be required in the proposed action, the column of the table reserved for what mitigation the ‘operator’ has proposed or committed to incorporate into its enforceable permits is mostly silent in several important areas. The FEIS should complete the missing information in this table.

DEIS Section 4.1.3, page 4-14, states that the project area does not contain Wilderness or Wilderness Study Areas (WSA). It concludes that there are no direct or indirect impacts to such inventoried areas identified elsewhere within the BLM resource management area. Although the project area may not contain wilderness or WSA according to BLM management records or decisions, there is a ‘citizens’ wilderness proposal area’ overlying the coal resource, i.e. see the Colorado Environmental Coalition’s website for “Hunter Canyon”. BLM may not need to protect this proposed area of wilderness characteristics, but this EIS should evaluate the impacts of the proposed action on the proposed Hunter Canyon wilderness. The proposed citizens’ wilderness area called Hunter Canyon extends to Big Salt Wash and so conflicts with much of the proposed LBA lease area. Access roads and drill pads for the methane drainage wells would disturb the surface area of Hunter Canyon. The FEIS should analyze this disturbance and propose appropriate mitigation.



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